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EXAMINER

EDWARDS, PATRICK L

ART UNIT PAPER NUMBER

2621

DATE MAILED: 02/12/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,856

Applicant(s)

ASAKURA, MASANORI

Examiner

Patrick L Edwards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 6.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-8, drawn to a method for interpolating or thinning out pixel data where the counter is not reset at the start of a data unit, classified in class 382 subclass 299.
 - II. Claim 9-16, drawn to a method for interpolating or thinning out pixel data where a counter is reset for bi-level data and not reset pseudo gray scale data, classified in class 358, subclass 3.09.
 - III. Claims 17-20, drawn to an image processing apparatus comprising a memory, counter, clock thin-out circuit and reset control circuit, classified in class 348, subclass 524.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because The details of claims 1 and 5, the broadest subcombination claims, are not required in claims 9 and 13, the broadest combination claims. The subcombination has separate utility such as an image processing method in which the pixel data is kept in sync with a clock rather than a counter.
3. Inventions I,II and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process claimed in groups I and II can be practiced by an apparatus different from the apparatus claimed in group III in that the memory along

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with the read and write clocks may be eliminated and the process be carried out on pixel data obtained directly from a CCD array or other sensing device.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Dar Adli on Wednesday February 4th, a provisional election was made without traverse to prosecute the invention of group I, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

6. The drawings are objected to for the following reasons:

a) Figures 3a and 8a contain the label "tow lines before present line". This label is either a misprint or is not explained in the specification.

A proposed drawing correction or corrected drawings are required in reply to the office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Tada et al. (USPN 4,893,195).

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With regard to claim 5, Tada discloses a method of thinning out pixel data in which the final enumerated value of a counter for a former unit is kept instead of being reset, and the counting processing at the beginning of a current unit is carried out with a consecutive enumerated value from the kept final enumerated value (col. 6 line 10 – col. 7 line 25 in conjunction with Figures 4 and 5). The combination of the adder 47 and the latch circuit 48 disclosed in Tada is analogous to the counter as recited in the claim and it follows that the output of the latch circuit at the end of a unit is analogous to the final enumerated value of a unit as recited in the claim. The combination of the adder 47 and the latch circuit 48 disclosed in Tada is analogous to the claimed counter in that both the claimed counter and said combination determine a cycle or period for a clock thinning operation (see paragraph 31 of applicant's specification) that doesn't correspond to the number of pixel data in a line.

Claim 1 differs from claim 1 only in that the preamble recites an interpolation operation instead of a thinning out method. Since the interpolation method mentioned in the preamble is not included in the body of the claim, it is not given any patentable weight.

With regard to claims 2 and 6, Tada discloses inputting the image data D1 on a line by line basis (see element 45 of Figure 4).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. Claims 3, 4, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tada as applied to claims 1, 2, 5 and 6 above, and further in view of Honma et al. (USPN 5,280,348)

With regard to claim 7, Tada discloses storing the pixel data in a memory in synchronization with a write clock (col. 6 lines 44-46 in conjunction with Figure 4). The thinned-out clock CK2 disclosed in Tada is analogous to a write clock as recited in the claim. Tada further discloses reading out pixel data in synchronization with a read clock (col. 6 lines 19-20 in conjunction with Figure 4). The clock CK1 disclosed in Tada is analogous to a read clock as recited in the claim. Tada further discloses thinning out the pixel data by generating the write clock through thinning out the read clock in accordance with the enumerated value of the counter (Tada col. 6 line 50 – col. 7 line 25 in conjunction with Figure 4).

Tada fails to expressly disclose that pixel data is read out from a memory. Honma, however, discloses reading pixel data from a memory (Honma col. 9 lines 45-51). It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Tada's image processing method by reading out pixel data from a memory as taught by Honma. Such a modification would have allowed for a more robust image processing method that could be performed as the image was being read in, or after a read-in operation had already occurred.

With regard to claim 8, Tada further discloses that one or more specified clocks are thinned out from the read clock in accordance with a value set in a register (Tada col. 5 line 51 – col. 6 line 7 in conjunction with Figures 2 and 4). The reducing data SN disclosed in Tada is analogous to the value set in a register as recited in the claim.

With regard to claim 3, all of the limitations of the claim have been addressed above, except for the additional limitation that pixel data is interpolated by generating the read clock through thinning out the write clock. Honma further discloses performing an interpolation operation by generating a read clock by thinning out a write clock (Honma col. 9 line 45 – col. 10 line 5 in conjunction with Figures 13 and 14(a-b)). The enlargement operation disclosed in Honma is analogous to

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interpolation as recited in the claim. It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Tada's image processing method by generating the read clock through thinning out the write clock in order to perform interpolation instead of generating the write clock through thinning out the read clock to perform a pixel thinning operation. Such a modification would have allowed for an image processing method that could both reduce and increase pixel data of an image.

With regard to claim 4, Tada further discloses that one or more specified clocks are thinned out from the read clock in accordance with a value set in a register (Tada col. 5 line 51 – col. 6 line 7 in conjunction with Figures 2 and 4). The reducing data SN disclosed in Tada is analogous to the value set in a register as recited in the claim.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Katsumata et al. (USPN 5,181,110).

Moore et al. (USPN 4,412,252)

Yamaguchi (USPN 5,668,637)

Seino (USPN 6,618,032).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (703) 305-6301. The examiner can normally be reached on 8:30am - 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

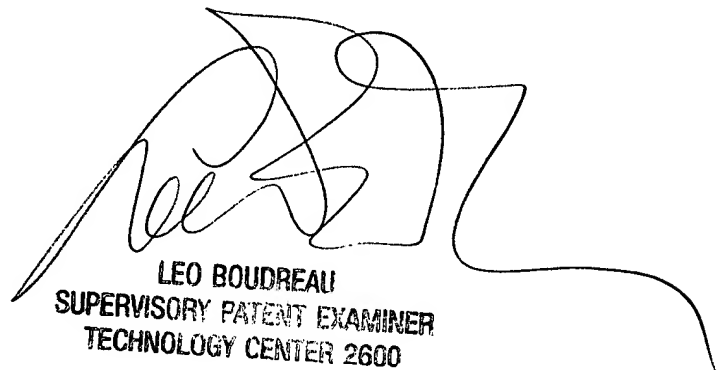
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Parick Lynn Edwards

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